WHAT IS CLAIMED IS

1. An automatic transmission comprising:

a first axis for inputting the power,

a second axis for outputting the driving force source,

at least one or more first gear group which consists of a drive gear fixed on said first axis, and a driven gear provided so as to engage or run idle with respect to said second axis with being engaged with said drive gear, and

at least one or more second gear group which consists of a driven gear fixed on said second axis, and a drive gear provided so as to engage or run idle with respect to said first axis with being engaged with said driven gear,

further comprising a torque transferring mechanism for transfering the torque between said driven gear which can run idle with respect to said second axis and said driven gear fixed to said second axis.

2. An automatic transmission comprising:

a first axis for inputting the power,

a second axis for outputting the driving force source,

at least one or more first gear group which consists of a drive gear fixed on said first axis, and a driven gear provided so as to engage or run idle with respect to said second axis with being engaged with said drive gear, and

at least one or more second gear group which consists of a drive gear fixed on said second axis, and a driven gear provided so as to engage or run idle with respect to said first axis with being engaged with said drive gear,

further comprising a torque transferring mechanism provided between said first gear group and said second gear group, and

wherein the torque is transferred from said 1st axis to

said 2nd axis with this torque transferring mechanism.

3. An automatic transmission comprising:

a first axis for inputting the power,

a second axis for outputting the driving force source,

at least one or more first gear group which consists of a drive gear fixed on said first axis, and a driven gear provided so as to engage or run idle with respect to said second axis with being engaged with said drive gear, and

at least one or more second gear group which consists of a drive gear fixed on said second axis, and a driven gear provided so as to engage or run idle with respect to said first axis with being engaged with said drive gear,

further comprising a torque transferring mechanism provided between said first gear group and said second gear group, and

wherein the torque is transferred from said 1st axis to said 2nd axis with this torque transferring mechanism while shifting.

4. An automatic transmission according to any one of claims 1, 2 and 3, wherein said torque transferring mechanism comprises:

a first gear engaged with said driven gear which can run idle with respect to said second axis,

a second gear engaged with said driven gear fixed to said second axis, and

a torgue transferring means for transferring the torque between said first gear and said second gear.

5. An automatic transmission according to claim 4, wherein the first gear engaged with said driven gear which can run idle with respect to said second axis, the second gear engaged with said driven gear fixed to said second axis, and the torgue

transferring means for transferring the torque between said first gear and said second gear in said torque transferriong mechanism, are provided on another axis different from said first axis and said second axis.

6. An automatic transmission according to any one of claims 1 to 5, wherein torque ratio transferred from said 1st axis to said 2nd axis by said 1st gear group, said torque transferring mechanism and said 2nd gear group is one or more.

7. An automatic transmission according to any one of claims 1 to 6, wherein the gear engaged with one of said drive gears fixed to said first axis is provided on another axis different from said first axis and said second axis,

further comprising a motor generator for driving and regenerating, and a torque transferring mechanism for adjusting the torque transfer between said gear and said motor generator.

8. An automatic transmission according to any one of claims 1, 2 and 3, wherein said torque transferring mechanism comprises a friction type clutch.

9. An automatic transmission according to claim 8, wherein the lubricant for said friction clutch is provided independently of the lubricant for said transmission.

10. An automatic transmission according to claim 7, wherein the motor engaged with said transmission is started by said motor generator.

11. An automatic transmission according to claim 7, wherein the driving force source of said motor generator is transferred

to said second axis while shifting.

12. An automatic transmission according to any one of claims 1 to 10, further comprising

a motor generator for generating the driving force source and regenerating the torque, and a transferring mechanism provided between wheels to which the torque of said transmission is not transferred and the motor generator, for transferring and interrupting the torque.

13. An automatic transmission according to claim 12, wherein the torque generated by said motor generator is transferred to said wheels by said transferring mechanism while shifting, and the torque is added to said wheel.

14. An automatic transmission comprising:

a first axis for inputting the power,

a second axis for outputting the driving force source,

at least one or more first gear group which consists of a drive gear fixed on said first axis, and a driven gear provided so as to engage or run idle with respect to said second axis with being engaged with said drive gear, and

at least one or more second gear group which consists of a drive gear fixed on said second axis, and a driven gear provided so as to engage or run idle with respect to said first axis with being engaged with said drive gear,

further comprising a torque transferring mechanism for transfering the torque between said drive gear which can run idle with respect to said first axis and said drive gear fixed to said first axis

15. An automatic transmission comprising:

a first axis for inputting the power,

a second axis for outputting the driving force source,

at least one or more first gear group which consists of a drive gear fixed on said first axis, and a driven gear provided so as to engage or run idle with respect to said second axis with being engaged with said drive gear,

at least one or more second gear group which consists of a drive gear fixed on said second axis, and a driven gear provided so as to engage or run idle with respect to said first axis with being engaged with said drive gear,

further comprising a first gear engaged with said driven gear which can run idle with respect to said first axis, a second gear engaged with said drive gear fixed to said first axis, and a torgue transferring means for transferring the torque between said first gear and said second gear.

16. An automatic transmission comprising:

a first axis for inputting the power,

a second axis for outputting the driving force source,

at least one or more first gear group which consists of a drive gear fixed on said first axis, and a driven gear provided so as to engage or run idle with respect to said second axis with being engaged with said drive gear,

at least one or more second gear group which consists of a drive gear fixed on said second axis, and a driven gear provided so as to engage or run idle with respect to said first axis with being engaged with said drive gear,

further comprising a first gear engaged with said drive gear which can run idle with respect to said second axis, a second gear engaged with said driven gear fixed to said second axis, and a torgue transferring means for transferring the torque between said first gear and said second gear in said torque

transferriong mechanism,

wherein the first gear, the second gear and the torque transferring means are provided on another axis different from said first axis and said second axis.

17. An automatic transmission comprising:

a first axis for inputting the power,

a second axis for outputting the driving force source,

at least one or more first gear group which consists of a drive gear fixed on said first axis, and a driven gear provided so as to engage or run idle with respect to said second axis with being engaged with said drive gear, and

at least one or more second gear group which consists of a drive gear fixed on said second axis, and a driven gear provided so as to engage or run idle with respect to said first axis with being engaged with said drive gear,

further comprising a torque transferring mechanism for transfering the torque between said driven gear which can run idle with respect to said second axis and said driven gear fixed to said second axis,

wherein when said driven gear of said first gear group runs idle, the torque is transferred from said first axis to said second axis through a driven gear which runs idle with respect to said drive gear of said first gear group, said torque transferring mechanism, and a driven gear of said second gear group, and when said driven gear of said first gear group is engaged to the second axis, the torque is transferred from said first axis to said second axis through the driven gear engaged to said drive gear of said first gear group.

18. A vehicle which installs automatic transmission comprising:

a first axis for inputting the power,

a second axis for outputting the driving force source,

at least one or more first gear group which consists of a drive gear fixed on said first axis, and a driven gear provided so as to engage or run idle with respect to said second axis with being engaged with said drive gear, and

at least one or more second gear group which consists of a drive gear fixed on said second axis, and a driven gear provided so as to engage or run idle with respect to said first axis with being engaged with said drive gear,

wherein the shifting is done by switching from the torque transfer from said 1st axis to said 2nd axis by said 1st gear group or said 2nd gear group to the torque transfer from said 1st axis to said 2nd axis by another said 1st gear group or another said 2nd gear group different from said 1st gear group or said 2nd gear group,

further comprising a torque transferring mechanism provided between one of said first gear groups and one of said said second gear groups in said transmission, and a shifting control means for transferring the torque from said 1st axis to said 2nd axis by said torque transferring mechanism while shifting,

wherein the amount of the back and forth accelaration change generated in said vehicle while shifting is controlled by said shift control means so as to fall within 1.0 m/s^2.

19. A vehicle according to claim 18, wherein the back and forth accelaration generated in said vehicle while shifting is controlled by said shift control means so as to become **more than 0.0 m/s^2**.

20. A vehicle which installs an automatic transmission

comprising:

a first axis for inputting the power,

a second axis for outputting the driving force source,

at least one or more first gear group which consists of a drive gear fixed on said first axis, and a driven gear provided so as to engage or run idle with respect to said second axis with being engaged with said drive gear,

at least one or more second gear group which consists of a drive gear fixed on said second axis, and a driven gear provided so as to engage or run idle with respect to said first axis with being engaged with said drive gear,

wherein the shifting is done by switching from the torque transfer from said 1st axis to said 2nd axis by said 1st gear group or said 2nd gear group to the torque transfer from said 1st axis to said 2nd axis by another said 1st gear group or another said 2nd gear group different from said 1st gear group or said 2nd gear group,

further comprising a torque transferring mechanism provided between one of said first gear groups and one of said said second gear groups in said transmission, and a control means for controlling the shifting by selecting a shifting system in which the torque transfer from said 1st axis to said 2nd axis is performed by said torque transferring mechanism while shifting or a shifting system in which said torque transferring mechanism is not used,

wherein the amount of the back and forth accelaration change generated in said vehicle while shifting is controlled by said control means so as to fall within 1.0 m/s^2.

21. A vehicle according to claim 20, further comprising a motor which generates the power introduced into said first axis,

wherein the torque is transferred from said 1st axis to

said 2nd axis by said torque transferring mechanism while shifting when the torque generated by said motor is more than a fixed value, and otherwise, the torque is not transferred from said 1st axis to said 2nd axis by said torque transferring mechanism while shifting.

22. A vehicle according to claim 20, further comprising a motor which generates the power introduced into said first axis,

wherein the torque is transferred from said 1st axis to said 2nd axis by said torque transferring mechanism while shifting when the throttle valve opening for adjusting the torque generated by said motor is more than a fixed value, and otherwise, the torque is not transferred from said 1st axis to said 2nd axis by said torque transferring mechanism while shifting.